



MICHELLE U. ROSENTHAL
206.535.6006
michelle@verislawgroup.com

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VIA CERTIFIED MAIL AND E-MAIL

Attn: Harbor Comments, U.S. EPA Region 10
805 SW Broadway, Suite 500
Portland, OR 97205
harborcomments@epa.gov
Tracking # 9590940212755246314765

Re: *Brix Maritime Co. Comments on the Portland Harbor Superfund Site Feasibility Study and Proposed Plan*

Dear EPA Region 10:

This letter presents Brix Maritime Co.'s (Brix) comments on the Feasibility Study (FS) and Proposed Plan (PP) issued by the U.S. Environmental Protection Agency (EPA) for the Portland Harbor Superfund Site (PHSS) on June 8, 2016. Brix is a marine transportation company that maintains an office, maintenance facilities, permanent work barge, and associated equipment storage at 9030 NW St. Helens Road in Portland (Brix Property). As a waterfront business dependent on commerce throughout the Lower Willamette River system, Brix has several concerns with the portrayal, selection, implementability, and equity of the proposed remedy and its components. We trust EPA will consider the following comments before finalizing the FS and in developing the Record of Decision (ROD).

A. EPA INCORRECTLY DEPICTS THE GROUNDWATER PLUME AT THE BRIX PROPERTY.

Since 1993, Brix has conducted extensive subsurface investigations and long-term groundwater monitoring activities at the Brix Property. Data from these studies were used to prepare a draft Source Control Evaluation Report (Brix's SCE Report) in September 2015 that delineated the extent of contamination and evaluated exposure pathways from the upland portion of the Brix Property to the river.¹ Brix's SCE Report confirms there is no groundwater pathway from the upland portion of the Brix Property to the river and that the upland groundwater plume stops at least 30 feet inland and upland from the river. For your convenience, we have included Figure 7 of Brix's SCE Report (*see Attachment A*).

Nonetheless, the FS and PP include groundwater contaminant plume maps that inaccurately depict the presence of a 500-foot-wide groundwater plume at the Brix Property (mistakenly identified as "Foss Maritime/Brix Marine") that purports to flow into the Willamette River at approximately River Mile (RM) 5.5.² The FS indicates that the figure shows "the nature and extent of known contaminate groundwater plumes currently or potentially discharging to the river" from the Brix Property.³ Sampling data refute this assertion.

¹ ESCI No. 2364.

² *See* FS Figure 1.2-19 and PP Figure 5.

³ *See* FS Page 1-13.

Brix's SCE Report is based on more than 20 years of soil and groundwater data. To assess whether groundwater contaminant migration poses a potential risk to the river, Brix compared the last three years of groundwater data collected from downgradient monitoring wells located at least 30 feet inland and upland from the river to Joint Source Control Strategy (JSCS) screening level values (SLVs)⁴ and draft preliminary remediation goals (PRGs) used in the draft final FS.⁵ These data indicate that polycyclic aromatic hydrocarbons (PAHs), the primary contaminants of concern on the Brix Property, were mostly non-detect, and infrequently detected in groundwater above JSCS SLVs and human health PRGs.⁶ Benzo(a)pyrene had a few exceedances as compared to ecological PRGs, but this compound generally was not detected at a method detection limit substantially below its PRG. This comparative analysis, coupled with the location of the downgradient monitoring wells at least 30 feet inland and upland from the river, minimal observed groundwater discharge at the river, and a previous groundwater seep sample below SLVs and PRGs, support the Brix SCE Report's conclusion that groundwater contamination is limited to the upland portion of the Brix Property and that no groundwater migration pathway to the river exists.

Brix submitted its SCE Report to the Oregon Department of Environmental Quality (DEQ) and EPA on September 29, 2015 for review and comment. EPA submitted its comments on Brix's SCE Report to DEQ on December 8, 2015,⁷ and while it requested additional stormwater monitoring and information about erodible soils, it did not dispute and did not comment on the Report's conclusions regarding the groundwater migration pathway. As depicted in Figure 7 of Attachment A, groundwater contamination is isolated to the upland portion of the Brix Property. Accordingly, Brix respectfully requests that EPA delete the incorrectly depicted groundwater plume from Figure 1.2-19, Section 4.2 figures and the text of Section 1.2.3.4 of the FS, and ensure that no further references be made in the ROD to this inaccurately portrayed groundwater plume.

B. THE REMEDY SELECTED FOR THE BRIX PROPERTY APPEARS TO BE IN ERROR GIVEN DATA INDICATING CONCENTRATION LEVELS ARE LOWER THAN ALTERNATIVE I CLEANUP LEVELS.

Brix has reviewed EPA's assignment of the Alternative I remedy along the Brix Property as depicted in the FS and PP.⁸ For reference, a figure is included as Attachment B that depicts Alternative I overlaid on an aerial photograph of the Brix Property and the surrounding area. While Brix recognizes that the prescriptive decision tree technology assignments in the FS are conceptual and have been included primarily for purposes of evaluation, they are overly conservative and unsupported by the data as applied to the Brix Property. By way of example, chemical data on sediment sampling points included in the Remedial Investigation (LPSG-S-010-R-1 and G212-1) that were collected next to Brix's shoreline – one beside the stationary work barge, the other at the end of the inner finger pier – had contaminant concentrations that were so low they already meet the most stringent Remedial Action Levels (RALs) under the more conservative cleanup requirements of Alternatives G and H, including PRGs for benthic risk,⁹ obviating the need for remedial action under the less stringent Alternative I. Nonetheless, the FS and PP presume dredging along Brix's shoreline and capping beneath its inner finger pier. Neither the FS nor the PP provides any data or a rationale to support application of these technology assignments to the Brix Property. Indeed, recent sampling indicates no remedial action is warranted.

⁴ Oregon Department of Environmental Quality (DEQ) and EPA 2005. Portland Harbor Joint Source Control Strategy - Final. December 2005 (Table 3.1, July 16, 2007, Revision).

⁵ Draft PRGs were issued by EPA Region 10 on July 29, 2015.

⁶ PAH concentrations were stable or decreasing in those instances where there were detections.

⁷ EPA 2015. Review Comments on the Draft Source Control Evaluation Report, Brix Maritime Co., Portland Oregon, Dated September 29, 2015. Submitted December 8, 2015.

⁸ See FS Figure 3.8-9c and PP Figure 19c. See, also, Interactive GeoPDF Map.

⁹ Values determined using Interactive GeoPDF Map and comparison of sediment data to PRGs for Remedial Action Objective (RAO) 5 on FS Table 2.2-8.

C. TECHNOLOGY ASSIGNMENTS ALONG THE BRIX PROPERTY ARE QUESTIONABLE AND TECHNICALLY INFEASIBLE.

The decision tree technology assignments in the FS and PP are overly simplistic and do not take into consideration site-specific waterfront features, resulting in questionable and often impracticable technology assignments that may not work at certain locations. As illustrated in Attachment B, the FS and PP assign dredging or capping throughout much of the river's shallow/nearshore areas, including at and near the Brix Property. Even assuming remedial action was necessary, dredging and capping would be difficult, if not impossible, at the Brix Property. Specific examples of Brix's concerns are as follows.

- Shoreline Dredging Infeasible. Dredging would occur along the entire shoreline of the Brix Property. In addition to relatively shallow water, the presence of the finger pier, an access ramp, a permanently moored work barge (*see Attachment A*), and steel and treated piles that anchor the floating pier and work barge, render river sediments in this area largely inaccessible. Additionally, the proposed removal area consists of native clays to silty clays that provide the base support for the upland slope, which consists of dredge fill and riprap. Removal of this compact native material at the base of this 2H:1V slope could destabilize the slope, potentially resulting in slope failure and the loss of the office building at the top of the river bank. Further, as mentioned in Section B, sediment data do not support the necessity of dredging along the shoreline.
- Capping Impracticable. Capping would occur under and adjacent to the finger piers and beneath the permanently moored work barge along the Brix Property. The area between the piers leading up to the work barge is used to access the fuel transfer station at the stationary work barge. The FS-assumed 3-foot thick cap might interfere with access during low water and, unless armored, could be affected by operational activities. The permanent work barge, which is anchored to steel piles, cannot be readily moved to construct a cap beneath it. Additionally, the cap could interfere with the requisite clearance during low water.

For the reasons discussed above, the application of prescriptive technology assignments to the Brix Property as proposed under Alternative I likely would result in the selection and implementation of a remedy that is unnecessary, based on available data showing that cleanup levels have already been met, and would not be fully implementable. While remedial design will address the need for remedial action at and near the Brix Property and elsewhere along the river, the ROD should acknowledge that site-specific factors may prevent the successful application of the presumptive remedies conceptually set forth in the PP. Additionally, the ROD should explicitly allow for adjustments in technology selection to address site-specific factors in specific sub-areas, such as those identified by Brix. Otherwise, remedy implementation throughout the river likely will be delayed by the need to pursue ROD amendments or Explanation of Significant Differences for areas not well suited for the conceptual technology assignments presented in the FS and PP.

D. CLEANUP LEVELS APPEAR TO HAVE BEEN ASSIGNED ARBITRARILY TO DIFFERENT AREAS.

The PP provides no rationale and offers no discernible technical basis for its assignment of different RALs to different Sediment Decision Units (SDUs) under Alternative I. For discussion purposes, the Brix Property is along SDU RM5W. The GASCO Site, which is a confirmed source of pyrogenic PAHs stemming from its historical role as a manufactured gas plant, is upstream of the Brix Property at SDU RM6W.¹⁰ A review of rolling river mile average concentrations for total PAHs and total DDX (the focused contaminants of

¹⁰ NewFields 2016. Concentrations and Character of PAH in Sediments in the Proposed Remedial Alternatives Area of the Portland Harbor Superfund Site, River Miles 5 – 6, 2015 Investigation. March 29, 2016.

concern for SDU RM5W)¹¹ reveals that the upstream SDU RM6W has both higher total PAH and higher total DDx concentrations than the downstream SDU RM5W. Given these higher concentrations, it follows that human health and benthic risks also would be higher at the upstream SDU RM6W than the downstream SDU RM5W. Despite these sediment data, EPA assigned less stringent Alternative D RALS to upstream SDU RM6W, and more stringent Alternative E RALS to downstream areas where GASCO's pyrogenic PAHs have migrated, including SDU RM5W.¹² As a result, the total PAH RAL for SDU RM5W is 35,000 µg/kg, while the PAH RAL for the upstream SDU RM6W is nearly twice that amount at 69,000 µg/kg.¹³ This approach is fundamentally unfair to the downstream parties and could result in the recontamination of downstream SDUs by the higher contaminant concentrations allowed in upstream SDU RM6W, rendering downstream remedies unachievable and hampering post-construction monitoring efforts.

Brix has been unable to locate any description of or explanation describing how EPA assigned these RALs in either the FS or the PP. Indeed, the PP states only that EPA conducted a more detailed evaluation of the effectiveness of all alternatives on an SDU-by-SDU basis and concluded that some areas of the PHSS merit less aggressive alternatives, while others require more aggressive remedial approaches. Needless to say, this general statement sheds no light on EPA's decision and creates the impression that EPA acted arbitrarily to the benefit of certain parties associated with upstream SDU RM6W and to the detriment of downstream parties. Brix requests that EPA reassess its approach and either apply Alternative E RALS to upstream SDU RM6W and Alternative D RALS to downstream SDUs or apply the same Alternative D RALS to SDUs RM5W and RM6W in the ROD to ensure that post-construction recovery of SDU RM5W can be achieved.

E. BENTHIC RISK ASSIGNMENTS DISREGARD AND CONTRADICT SAMPLING DATA.

Brix has serious concerns about EPA's revised approach to benthic risk area designations, the manner in which it assesses whether remedial approaches are protective of benthic organisms, its reliance on certain sediment data to the exclusion of other data, and its inconsistency with the EPA-approved Baseline Ecological Risk Assessment (BERA). This revised approach has resulted in flawed conclusions about benthic risk levels and the remedial efforts required to address them. The BERA relied on multiple lines of evidence to identify benthic risks, whereas EPA directly compared sampling results from contaminated sediments to risk-based PRGs in sediment for RAO 5.¹⁴ In the FS, the EPA selected the risk-based PRGs for RAO 5 from the lowest threshold reference values (TRVs) in the BERA to ensure they were protective of all potential receptors.¹⁵ For reasons it does not explain, EPA then defines benthic risk areas as any place where contaminated sediments are 10 times (an order of magnitude) greater than the RAO 5 PRGs.¹⁶ EPA has also set new "interim targets" for RAO 5 by arbitrarily deciding that a particular remedial alternative is "protective" if there is a 50% post-construction reduction in risk in the area allegedly posing an unacceptable benthic risk.¹⁷ EPA presents no scientific justification for its modified approach to benthic risk.

Based on these new criteria, EPA has concluded that nearly the entire river area between RMs 5 and 6 poses a benthic risk (*i.e.*, above RAO 5 PRGs), including SDU RM5W due to elevated levels of PAHs and DDx.¹⁸ A substantial portion of this river mile, as well as a thin sliver of the outer finger pier of the Brix

¹¹ See PP Page 50, Table 16, and FS Figures D9-3b and D9-3c, respectively.

¹² See PP Figure 9.

¹³ See PP Table 13, Page 26.

¹⁴ See FS Table 2.2-8. RAO 5 is as follows: "Reduce to acceptable levels risks to ecological receptors from indirect exposures through ingestion of prey to COCs in sediments via bioaccumulation pathways from sediment, groundwater and/or surface water and comply with identified ARARs."

¹⁵ See FS Section 2.2.2.2, Page 2-11.

¹⁶ See FS Section 4.1.3, Page 4-8.

¹⁷ *Ibid.*

¹⁸ See PP Table 16, Page 50; also as shown by the Interactive GeoPDF Map as ">RAO 5 PRGs."

Property, are identified as a benthic risk area (*i.e.*, 10 times higher than RAO 5 PRGs).¹⁹ Sampling data do not support, and strongly refute, this flawed assertion. The following sets forth Brix's concerns regarding EPA's revised approach to benthic risk.

- Sampling Results Do Not Support the Widespread Benthic Risk Designation Along the Brix Property. Brix compared sediment data adjacent to and near the Brix Property to RAO 5 PRGs and reviewed FS Appendix D figures²⁰ in an effort to understand the basis for EPA's benthic risk designation at and in the vicinity of the Brix Property.²¹ The FS Appendix D figures show that this designation appears to be based primarily on PRG exceedances of total PAHs and TPH-Diesel in this area.²² However, multiple lines of evidence undercut this designation, including chemical data and toxicity bioassay results that EPA disregarded: (1) of the nine surface sediment samples collected along the Brix Property,²³ only three had RAO 5 PRG exceedances;²⁴ (2) bioassay results confirmed that three of four samples had no hits;²⁵ and (3) BERA modelling results show "no hit" designations for other samples along the Brix Property.²⁶ These findings collectively confirm that the large area of benthic risk portrayed in the FS along the Brix Property is incorrect and unsupported by the data.²⁷
- EPA Is Not Considering Toxicity Bioassay Results. Contrary to the BERA, EPA relied on a point-by-point comparison of chemical data on sediment against EPA RAO 5 PRGs to identify benthic risks and disregarded bioassay results showing there are no adverse impacts to benthic test organisms. As a result, FS Figure 4.1.1 incorrectly depicts nearly the entire river between RMs 5 and 6 as a comprehensive benthic risk area exceeding RAO 5 PRGs, even though bioassay results in the BERA showed "no hits" were detected mid-channel at RM 5.2 and on the east side of the river between RMs 5.5 and 5.7 (*see* FS Figure 6-28a). EPA cannot simply ignore empirical data confirming there is no benthic risk when designating areas of benthic risk across the PHSS.
- Benthic Risk Area Designations Must Be Refined. As noted above, EPA has designated a thin sliver area of benthic risk (*i.e.*, 10 times RAO 5 PRGs) along the outer finger pier along the Brix Property. But a review of the data reveals that only one surface sediment sample (Sample G210) at one end of this thin benthic risk area exceeds this criterion due to total PAHs, while all other sampling results are lower than the EPA-driven standard of 10 times RAO 5 PRGs.²⁸ Brix recognizes EPA cannot readily engage in this level of detailed analysis everywhere at a site this large. But in areas where benthic risk designations are large in size, but based on only a few data points (*e.g.*, the large benthic risk area of the channel just off and downstream of the Brix Property²⁹), EPA must ensure the data support such designations. A comprehensive benthic risk review performed in the April 2013 version of the BERA did not identify this portion of the river as a benthic risk area.³⁰ Based on these data, there is no widespread area of benthic risk. For the reasons discussed above, EPA should: (1) reduce the size of the benthic risk area along Brix's outer finger pier to a small area around sample G210; and (2) review larger benthic risk areas with few data points before designating them as a benthic risk area

¹⁹ See the Interactive GeoPDF Map as ">10x RAO 5 PRGs."

²⁰ See FS Appendix D Figures D11-1a through D11-1p.

²¹ As shown by the Interactive GeoPDF Map as ">RAO 5 PRGs."

²² See Appendix D Figures D11-1l and D11-1o, respectively.

²³ See Samples LPSG-S-020-R-1, G205, WP-PG-42, G208, G210, LPSG-S-018-R-1, G212-1, G212-2, and G213.

²⁴ See Samples WP-PG-42, G210, and G213.

²⁵ See BERA Figure 6-28a for visual summary of bioassay results on samples G205, G212-1, and G213.

²⁶ See BERA Figure 6-28a for logistic regression model (LRM) and floating percentile model (FPM) results.

²⁷ See FS Figure 4.1-1.

²⁸ See footnote 22 for surface sediment samples along the Brix property.

²⁹ For example, this large benthic risk area (>10x RAO 5 PRGs) is shown in orange on FS Alternative I Figure 4.2-29.

³⁰ See Final (Draft) BERA Map 12-1a. Section 12 and Map 12-1a were removed in the Final BERA, dated December 16, 2013.

and using them in determining the percentage of post-construction reduction for evaluation of RAO 5 protectiveness.

- Using 50% Post-Construction Reduction as a Remedial Target for Benthic Risk Is Arbitrary. The FS indicates that a 50% reduction in unacceptable benthic risk is an acceptable post-construction target for assessing whether a remedial alternative is protective of benthic organisms.³¹ The FS provides no rationale and offers no scientific support for this statement, and as a result, EPA's approach appears arbitrary. Benthic risk areas should be identified based on a comprehensive analysis that considers and weighs multiple lines of evidence, including sediment bioassay results, the magnitude and number of exceedances of PHSS-specific derived TRVs, and the spatial extent of such exceedances.

F. EPA MUST CONSIDER POTENTIAL ECONOMIC IMPACTS OF TECHNOLOGY ASSIGNMENTS ON WATERFRONT BUSINESSES.

The Brix Property operates as a tug and barge mooring and dispatch facility that provides river barging, ship assist, and ocean towing services to customers throughout the western United States. Daily operations include vessel scheduling and dispatch, crew rotation, fueling, and routine maintenance of tugboats at the permanently moored stationary work barge. For the reasons discussed above, Brix is concerned that the remedy proposed at or along the Brix Property could interfere with or impede daily operations, resulting in significant adverse economic impacts to the business. The ROD should acknowledge such constraints on waterfront businesses and affirm that any remedial action ultimately selected will factor into remedial design such considerations as technology assignments, production rates (*i.e.*, dredging quantities), and seasonal timing (*i.e.*, to account for busier and slower periods of business) to account for facility operations, minimize or avoid facility closures, and prevent adverse economic impacts to waterfront businesses.

Brix is prepared to discuss the issues presented above and to provide any additional information that would be helpful to the EPA as the agency responds to comments on the PP and prepares the ROD. Please let me know if you have any questions.

Sincerely,

VERIS LAW GROUP PLLC



FOR MICHELLE U. ROSENTHAL

cc: Client

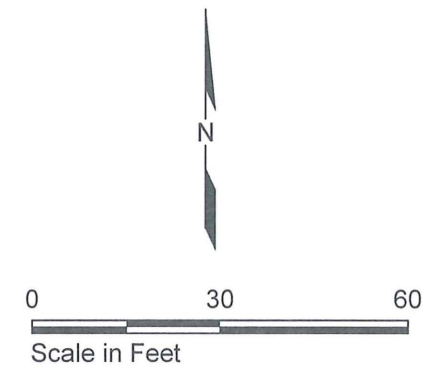
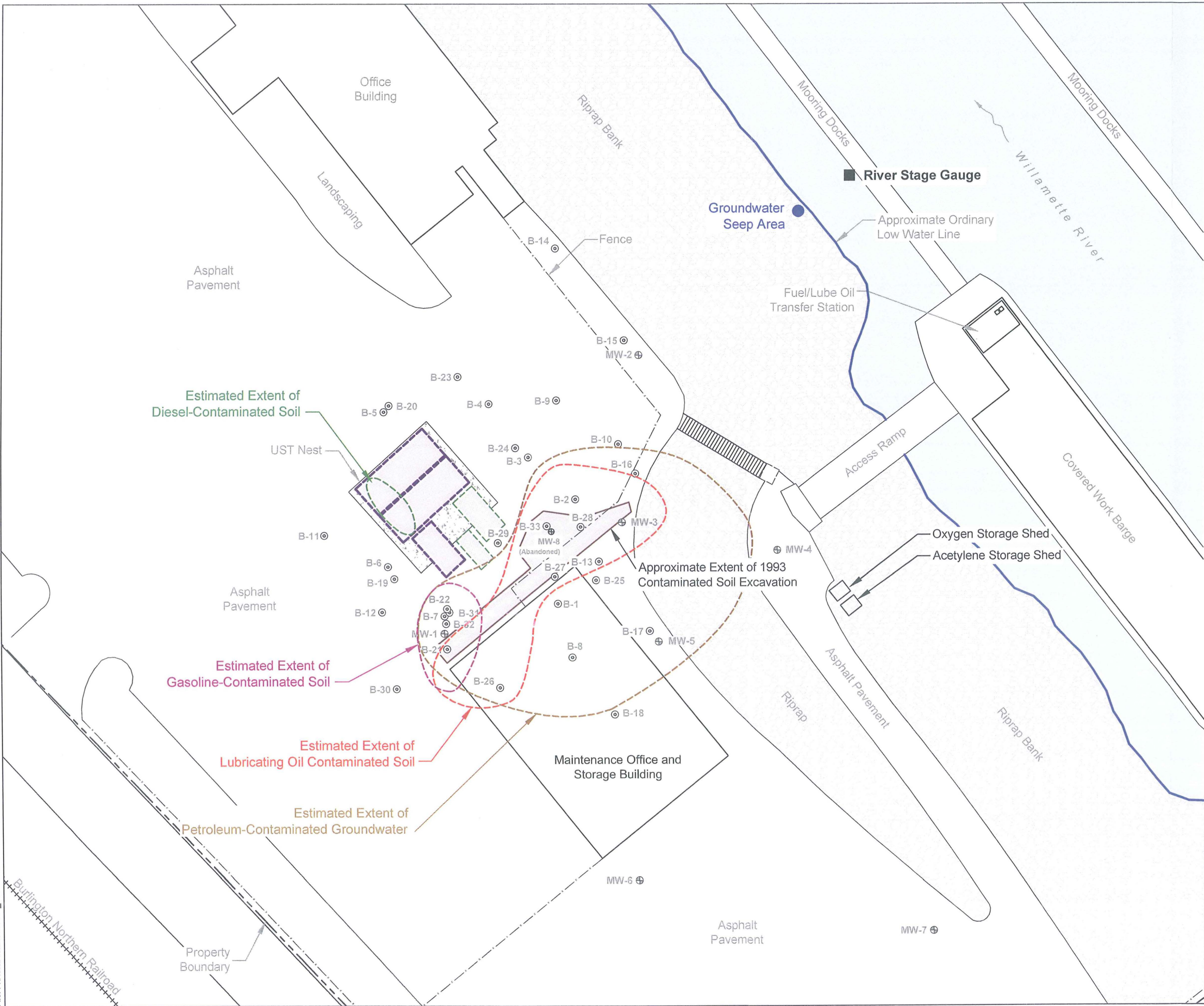
Enclosures:

<u>Attachment A:</u>	Brix's SCE Report, Figure 7
<u>Attachment B:</u>	Alternative I as Applied to the Brix Property

³¹ See FS Section 4.1.3, Pages 4-8.


Attachment A

File: F:\Notebooks\1563404_Brix Maritime 2015 Environmental Services\CAD\1563404 (CompleteSet).dwg Layout:ProductExtent Date: 09-28-2015 Author: melissaschweitzer



- LEGEND**
- Existing UST (represented by a solid purple rectangle)
 - Former UST (represented by a dashed green rectangle)
 - MW-6 ⊕ Monitoring Well
 - B-11 ⊙ Boring

Source: Monitoring well and boring locations per a 2005 survey by Statewide Lead Surveying, Inc.

Brix Maritime Co. 9030 NW St. Helens Road, Portland, Oregon	
Extent of Petroleum Contamination	
15634-04	9/15
	Figure 7

Attachment B



Legend

Technology Assignment



Cap



Dredge



Dredge in Nav-FMD



Dredge with Cap